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BRENTANO AND WUNDT: EMPIRICAL AND EXPERIMENTAL PSYCHOLOGY¹

By E. B. TITCHENER

§ 1. The year 1874 saw the publication of two books which, as the event has shown, were of first-rate importance for the development of modern psychology. Their authors, already in the full maturity of life, were men of settled reputation, fired as investigators with the zeal of research, endowed as teachers with a quite exceptional power to influence younger minds, ready as polemist to cross swords with a Zeller or a Helmholtz. Yet one would look in vain for any sign of closer intellectual kinship between them; hardly, indeed, could one find a greater divergence either of tendency or of training. Psychology, seeing how much their work and example have done to assure her place among the sciences, may gladly confess her debt to both. The student of psychology, though his personal indebtedness be also twofold, must still make his choice for the one or the other. There is no middle way between Brentano and Wundt.²

Franz Brentano began his career as a catholic theologian. In 1867 he published an outline of the history of philosophy within the mediaeval church which sets forth, as clearly and sharply as the essay of thirty years later, his famous doc-

¹ The following paragraphs form the introduction to the first volume of my long-projected and long-delayed work upon Systematic Psychology. When I wrote them, Brentano and Wundt were still living. Brentano died at Zurich, March 17, 1917; Wundt died at Leipsic, Aug. 31, 1920.

² F. Brentano, *Psychologie vom empirischen Standpunkte* (henceforth cited as *PES*), i, 1874. Cf. the Biographical Note in F. Brentano, *The Origin of the Knowledge of Right and Wrong*, trs. C. Hague, 1902, 119 ff.; M. Heinze, *F. Ueberwegs Grundriss der Geschichte der Philosophie*, iv, 1906, 332 ff. W. Wundt, *Grundzüge der physiologischen Psychologie* (henceforth cited as *PP*), 1874. The first ten chapters of Wundt's work were issued in 1873 and are utilised by Brentano. For a bibliography of Wundt's scientific writings see *Amer. Journ. Psych.*, xix (1908) ff.; cf. Heinze, *op. cit.*, 322 ff.

trine of the four phases.³ Early and late, however, his intellectual interest has centered in the philosophy of Aristotle. He came to psychology by way of an intensive study of the *De Anima*, and he has made the Aristotelian method his pattern of scientific procedure. We possess, unfortunately, only the first volume of his *Psychologie*: Brentano seems always to have preferred the spoken to the written word: but this volume, like everything else that he has given to the press, is complete in itself, the finished expression of his mature thought.

Wilhelm Wundt started out as a physiologist, interested in the special phenomena of nerve and muscle. In 1862 he had sought to lay the foundations of an 'experimental psychology' (the phrase now appears in print for the first time)⁴ in a theory of sense-perception. Here he fell into the mistake to which every student of natural science is liable who turns, without due preparation, to the things of mind: the mistake, namely, of supposing that psychology is nothing more than an applied logic; and the mistake was repeated in a popular work upon human and animal psychology which followed on the heels of the technical volume. By 1874 he had definitely discarded this earlier view for the conception of psychology as an independent science. He still maintained, however, that the path to it leads through the anatomy and physiology of the nervous system.

Such, in briefest outline, were the conditions under which the two psychologies acquired their form and substance. We see, on the one hand, a man who has devoted his 'hours of solitary reflection' to ancient and mediaeval philosophy; we see, on the other hand, a man who has wrought out in the laboratory his contributions to the latest-born of the experimental sciences. They are both professors of philosophy, and they are both to range widely, in the future, over the varied fields of philosophical enquiry. Yet it would be wrong to suppose that the psychology to which they have now attained, and which, by a happy chance, they give to the world in the same year, represents merely an incident, even if it were the central incident, of their philosophical history. Psychology, on the contrary, has laid strong hands upon them, and is to dominate all their further thinking. Wundt, a gen-

³ J. A. Möhler, *Kirchengeschichte*, ii, 1867, 539 f.; F. Brentano, *Die vier Phasen der Philosophie und ihr augenblicklicher Stand*, 1895. The four phases, repeated in the three great philosophical periods, are those of scientific construction, failure or perversion of the scientific interest, scepticism and mysticism.

⁴ W. Wundt, *Beiträge zur Theorie der Sinneswahrnehmung*, 1862, vi.

eration later, will round off the manifold list of his books with the encyclopaedic folk-psychology, and Brentano never gives up the hope of a descriptive—to be followed, perhaps, at long last by a genetic—psychology as the ripe fruit of his studious old age.

§ 2. We shall better understand the nature of this choice which lies before us if we first note the points of resemblance between the two systems. For even in 1874 psychology was not in such bad case that Brentano and Wundt are always at variance. They agree that psychology holds a place of high importance in the fellowship of the sciences, and that it is logically prior to natural science.⁵ They agree that it may dispense with the concept of substance and confine itself to an account of phenomena.⁶ They reject the unconscious as a principle of psychological explanation.⁷ They define the unity of consciousness in substantially the same terms.⁸ So far there is agreement: and though the agreement is largely of a formal kind, and though a good deal of it has a negative ground in the reaction against Herbart, it serves nevertheless to mark out a common universe of discourse.

On the material side there is also agreement, with such difference of emphasis as the difference of authorship would lead us to expect. We find, for instance, that Brentano deals at length with the general method of psychology, and is at pains to distinguish inner perception from inner observation, while Wundt takes inner observation for granted and describes in detail only those special procedures which raise it to the rank of experiment.⁹ We find that Wundt devotes much space to Fechnerian psychophysics, and interprets the psychophysical law as a general psychological law of relativity, while Brentano makes only incidental and critical mention of Fechner's work.¹⁰ The differences are striking enough, but behind them lies agreement regarding the subject-matter of psychology. Even in the extreme case, where the one book emphasises what the other omits, difference does not of necessity mean disagreement. We find, again, that Wundt says nothing of a question which for Brentano is the essential problem of psychology as it was the first problem of psychophysics, the question of 'immortality,' of the continuance of our mental life after death, and conversely that Brentano fails

⁵ *PES*, 24 ff., 119; *PP*, 4, 863.

⁶ *PES*, 10 ff.; *PP*, 9, 12, 20.

⁷ *PES*, 133 ff.; *PP*, 644 f., 664, 708 f., 712, 790 ff.

⁸ *PES*, 204 ff.; *PP*, 715 ff., 860 ff.

⁹ *PES*, 34 ff., 184; *PP*, 1 ff.

¹⁰ *PP*, 421; *PES*, 9 f., 87 ff.

to discuss Wundt's cardinal problem of attention. Yet Wundt had touched upon the question of immortality in his earlier writing, and Brentano plainly recognises that there is a problem of attention, although (as we may suppose) he has put off its discussion to his second volume.¹¹

So the student of psychology who read these two books in their year of issue might, if he had made due allowance for the training and natural tendencies of the authors, have entertained a reasonable hope for the future of his science; and we ourselves, who see their differences far more plainly than was possible for him, may still hope that the main issue can be taken on common ground and fought out at close quarters.

§ 3. Brentano entitles his book 'psychology from the empirical standpoint,' and Wundt writes 'physiological psychology' on his title-page and suggests 'experimental psychology' in his text.¹² The adjectives do not greatly help us. For all experimental psychology is in the broad sense empirical, and a psychology which is in the narrow sense empirical may still have recourse to experiment. To show the real difference between the books, the difference that runs through their whole texture and composition, we need at this stage terms that are both familiar and clear; the time has not yet come for technicalities and definitions. We may say, as a first approximation, that Brentano's psychology is essentially a matter of argument, and that Wundt's is essentially a matter of description.

At the end of his discussion of method Brentano refers with approval to Aristotle's use of *aporiae*, of difficulties and objections, wherein a subject is viewed from various sides, and opinion is weighed against opinion and argument against argument, until by comparison of pros and cons a reasonable conclusion is reached.¹³ This is, in the large, his own way of working. He appeals but rarely, and then only in general terms, to facts of observation. His rule is to find out what other psychologists have said, to submit their statements to a close logical scrutiny, and so by a process of sifting to pre-

¹¹ PES, 17 ff., 32 f., 95 f.; Wundt takes up the question of immortality (indirectly, it is true) in *Vorlesungen*, etc., ii, 1863, 436, 442; cf. the direct treatment in the later edition, 1892, 476 ff. Brentano recognises the problem of attention in PES, 91, 155; cf. 263, and C. Stumpf, *Tonpsychologie*, i, 1883, 68; ii, 1890, 279 f.

¹² PP, 3.

¹³ PES, 96 f.; cf. J. S. Mill, Grote's Aristotle, *Fortnightly Rev.*, N. S. xiii, 1873, 48 ff. Brentano had earlier noted, with the same approval, the use of *aporiae* by Thomas Aquinas: see J. A. Möhler, *Kirchengeschichte*, ii, 1867, 555.

pare the reader's mind for a positive determination. When the ground has thus been cleared Brentano's doctrine, novel though it may be, has the appearance (so to say) of a necessary truth; we feel that we have duly considered the possibilities in the case and have come to the one rational decision; and if for conscience' sake we go on to deduce and to verify, we still are assured beforehand that everything will fit together within the system. Minor points may need to be expanded; even, perhaps, in the light of further *aporiae*, to be corrected; but the whole exposition gives the impression of finality.¹⁴ It is no wonder, then, that many students have judged the author successful in his aim of writing, not Brentano's psychology, nor yet a national psychology, but—psychology.¹⁵

Wundt's book, on the contrary, abounds in facts of observation: anatomical facts, physiological facts, results of psychophysical and psychological experiment. Its introductory chapter is brief to the point of perfunctoriness, and criticism of psychological theories is packed away into fine-print paragraphs that, to all intents and purposes, are a series of appendices. There is, to be sure, a great deal of argument. Where the facts are scanty, they must not only be generously interpreted but must also be eked out by hypothesis; if a leading physiologist has mistaken the problem of sense-perception,

¹⁴ I know of only three corrections that Brentano has made to his psychology. (1) In *PES* 292 degree of conviction, as intensity of judgment, is declared analogous to degree of intensity of love and hate (cf. 203); in the notes to *The Origin of the Knowledge of Right and Wrong* (1889), 1902, 52 f., this analogy is denied. (2) In *PES* 202 f. feeling is said to be always present along with ideation; the belief to the contrary is due to the mistaken preference of memory over inner perception (44); but in *Untersuchungen zur Sinnespsychologie*, 1907, 119, 124, the acts of the two higher senses are not intrinsically emotive. (3) In *PES* 115 the object upon which a psychical phenomenon is directed is not to be understood as *eine Realität*; but the notes appended to the reprinted section *Von der Klassifikation der psychischen Phänomene* (1911, 149) lay it down that "nie etwas anderes als Dinge, welche sämtlich unter denselben Begriff des Realen fallen, für psychische Beziehungen ein Objekt abgibt."—There would, no doubt, if the book were rewritten, be many other modifications of detail, and yet others if the second volume were undertaken; the discussion of the modi of ideation in the *Klassifikation* shows that Brentano had not in 1874 thought out the doctrine of his Bk. iii. In the main, nevertheless, the doctrine of 1874 has stood the test of Brentano's own continued reflection and of the attacks of critics.

Such an achievement is worthy of all admiration. Only we must add—those of us who challenge Brentano's premises—that even isolated changes are disconcerting. The first statement is so serenely confident, and the changes are again so confidently made!

¹⁵ *PES*, vi.

he must be argued into a better way of thinking; in any case, the new science of experimental psychology must offer a bold front to her elder sisters.¹⁶ The argument, none the less, is always secondary and oftentimes plainly tentative; so that the book as a whole gives the impression of incompleteness, of a first essay which can be improved when more work (and a great many suggestions of further work are thrown out¹⁷) has been accomplished. Hence it is no accident, but rather a direct reflex of the spirit in which the authors approached their task, that Brentano's volume still bears the date 1874 while Wundt's book, grown to nearly triple its original size, has come to a sixth edition.¹⁸

This thorough-going difference of argument and description means, of course, a radical difference of attitude toward psychology itself. It means that Brentano and Wundt, in spite of formal and material agreement, psychologise in different ways. Our next step, therefore, is to place ourselves inside the systems and to realise, so far as we may without too much detail, what manner of discipline they intend psychology to be. We have to choose: and the illustrations that follow will show the alternatives of choice in concrete and tangible form.

§ 4. Brentano defines psychology as the science of psychical phenomena. The term may easily be misleading: for the phenomena in question are very far from being static appearances. Generically they are activities; in the individual case they are acts. Hence they can properly be named only by an active verb. They fall into three fundamental classes: those, namely, of Ideating (I see, I hear, I imagine), of Judging (I acknowledge, I reject, I perceive, I recall), and of Loving-Hating (I feel, I wish, I resolve, I intend, I desire). We may use substantives if we will, and may speak of sensation and idea, memory and imagination, opinion, doubt, judgment, joy and sorrow, desire and aversion, intention and resolution; but we must always bear in mind that the psychical phenomenon is active, is a sensing or a doubting or a recalling or a willing.

It is true that we never have act without content. When we ideate, we sense or imagine something; when we judge,

¹⁶ *PP*, Vorwort.

¹⁷ *PP*, 284, 293, 314, 317, 373, 394, 399, etc., etc.

¹⁸ See the prefaces to the successive editions of the *PP*. Even the sixth edition, as I have shown elsewhere (*Psych. Rev.*, xxiv, 1917, 52 f.), has not attained to systematic completion, and only in the fifth (*PP*, i, 1902, ix) did Wundt set himself definitely to the task of system-making.

we perceive something, acknowledge the truth of something, recall something; when we love or hate, we take interest in something, desire or repudiate something. This, however, is precisely the difference between psychical and physical phenomena. The latter are blank and inert: the color or figure or landscape that I see, the chord that I hear, the warmth or cold or odor that I sense, the like objects that I imagine, all these things are described when their given appearance is described; their appearance sums them up and exhausts them; they have no reference, and do not carry us beyond themselves. Psychical phenomena, on the other hand, are precisely characterised by relation to a content, by reference to an object; they contain an object intentionally within them; and this character of immanent objectivity, in virtue of which they are active, marks them off uniquely from the physical phenomena upon which they are directed or toward which they point. Even in cases where the content of a psychical phenomenon is not physical, but is another psychical phenomenon, the distinction holds good. For the act which becomes content or object of another act is not thereby deprived of its essential character; it is still active in its own right; and it is therefore by no means confusable with bare physical appearance.¹⁹

These are Brentano's views of the subject-matter of psychology. He begins by considering the alleged differences between physical and psychical, finds an adequate *differentia* of the psychical, and is therefore able to define psychology in terms of the matter with which it deals. He then reviews the principal classifications hitherto made of psychical phenomena, and arrives at a classification of his own, in which judgment is accorded independent rank, and feeling and will are bracketed under a single heading. Throughout the discussion his chief reliance is upon argument. To be sure, he takes the testimony of inner perception; but inner perception is not observation; it is rather a self-evident cognition or judgment; and as such it is, if we may use the phrase, of the same stuff as argument.²⁰ Psychological observation is possible for Brentano only when past acts are recalled in memory; then indeed, as he admits, even a sort of experimentation becomes possible. Not only, however, is memory subject to gross illusion, but the act of memory, once more, falls under the category of judgment, so that experiment itself takes place in the world

¹⁹ *PES*, 23 f, 35, 101 ff, 161, 167, 256 ff. On the problem of natural science as an explanatory discipline, see 127 ff.

²⁰ *PES*, 35 ff, 181 ff (summary 202 f), 262. Cf. *Klassifikation*, 1911, 129.

of argument.²¹ The empirical psychology thus employs the same psychical activities to establish the nature of its subject-matter and to discuss the variety of psychological opinion.

§ 5. For Wundt, psychology is a part of the science of life. Vital processes may be viewed from the outside, and then we have the subject-matter of physiology, or they may be viewed from within, and then we have the subject-matter of psychology.²² The data, the items of this subject-matter, are always complex, and the task of experimental psychology is to analyse them into "the elementary psychical processes." If we know the elements, and can compare them with the resulting complexes, we may hope to understand the nature of integration, which according to Wundt is the distinguishing character of consciousness.²³

Analysis of the processes of the inner life brings us, in the last resort, to pure sensations, constituted originally of intensity and quality. Sensations carry no reference; they look neither before nor after; they tell us nothing of their stimuli, whether external or organic, and nothing of their point of excitation, whether peripheral or central, nor do they forecast the ideas in which we find them synthetised. They simply run their course, qualitatively and intensively, and may be observed and described as they proceed.²⁴ Ideas, in their turn, are originally constituted of these sensations; there is nothing within or upon them to show whether they are ideas of imagination or perceptions.²⁵ Individual ideas differ psychologically from general ideas solely in the nature of their sensory constituents: in the former the complex of sensations is constant, in the latter it is variable.²⁶ Concepts are not "psychical formations" at all; if we psychologise them, we discover only their substitutes in consciousness, spoken or written words, accompanied by a vague and indeterminate feeling.²⁷ Judgments, in the same way, belong to logic, and not primarily to psychology; logic and psychology approximate only as a result of the parallel growth, long continued, of conceptual thinking and its expression in language; our "conscious psychological

²¹ *PES*, 42 ff, 162, 169, 262; *Klassifikation*, 130.

²² *PP*, 1 ff.

²³ *PP*, 5, 20, 717.

²⁴ *PP*, 273 ff., 484 f. When sensations enter into connection with one another, the third attribute of affective tone or sensory feeling is added. Intensity and quality are, however, the "more original" constituents.

²⁵ *PP*, 464 f.

²⁶ *PP*, 468.

²⁷ *PP*, 672.

processes " consist originally of nothing more than ideas and their connections.²⁸

The trend of all this analysis is clear: Wundt is trying to describe mind, to show the stuff of which it is made, to reduce it to its lowest terms. When, however, he turns from analysis to synthesis, the exposition is less easy to follow. Sensations are integrated into ideas by a "psychical synthesis" which Wundt himself compares to a chemical synthesis and which critics have assimilated to Mill's "mental chemistry."²⁹ Ideas gain their objective reference by a "secondary act" which seems to consist, psychologically, in the simple addition of further ideas;³⁰ yet the objective reference is itself put, later on, to psychological purposes. Concepts and forms of intuition are made 'postulates' of advancing thought,³¹ as if the logical and practical aspects of mind were necessarily implied in its given or phenomenal aspect, and as if the psychologist might shift from one aspect to another without breach of scientific continuity. But though we may puzzle over details, there is nothing obscure in the general situation. Wundt, like many others of his generation, is dazzled by the vast promise of the evolutionary principle;³² 'original' is for him more or less what 'nascent' is for Spencer; the later must derive from the earlier, because that is the way of things, and the later has no other basis. Let us remember, all the same, that Wundt's primary effort is to describe, and that he falls back upon 'genetic explanation' only when some phase of the traditional subject-matter of psychology proves to be indescribable.

That, then, is one of the threads of Wundt's system. Even a descriptive psychology cannot, however, be written simply in terms of sensations and their modes and levels of psychological integration. For the field of consciousness, Wundt reminds us, is not uniformly illuminated; it shows a small bright area at its centre and a darker region round about; the ideas which occupy it differ in their conscious status. So arises the problem of attention. Descriptively—Wundt takes up the task of description piecemeal, in different contexts, as

²⁸ *PP*, 709 ff.

²⁹ *PP*, 484 f; J. S. Mill, *A System of Logic*, 1843, bk. vi, ch. iv (ii, 1856, 429); *An Examination of Sir William Hamilton's Philosophy*, 1865, 286 f; note in J. Mill, *Analysis of the Phenomena of the Human Mind*, i, 1869, 106 ff. The original source is D. Hartley, *Observations on Man*, 1749, pt. i, ch. i, sect. 2, prop. 12, cor. 1 (i, 1810, 77 f.).

³⁰ *PP*, 465.

³¹ *PP*, 672, 680.

³² *PP*, vi.

if it were 'on his conscience'—attention reduces to clearness of ideas and characteristic feelings of effort or strain.³³ It has two concrete manifestations, apperception and voluntary action; we speak of apperception when we are considering the internal course of ideas, and of voluntary action when we are considering the issue of an emotion in external movement.³⁴ Both forms of the attentional process are subject to conditions, and both are strictly correlated with physiological processes in the cerebral cortex; they therefore fall within the limits of a scientific psychology.³⁵ Yet psychologists have neglected them, and have paid the penalty of this neglect in inadequate psychology and untenable philosophy.³⁶

We need not here trace the doctrine of attention further; we need not either debate whether the problem of attention is included in Wundt's formal statement of the task of experimental psychology. We may, however, as an illustration of the interweaving of the two systematic threads, glance at his treatment of the association of ideas. He begins, as we might expect, with mode of integration; and under this heading declares that the recognised laws, of similarity and of frequency of connection in space and time, are imperfect even as empirical generalisations. We find, it is true, two forms of association, distinguishable in the free play of fancy and in reflective thought. But the one is wider than association by similarity, in that the effective resemblance may reside in any and every sensory constituent of the ideas concerned, and especially in their affective tone, while the other reveals itself simply as an affair of habit. Wundt therefore proposes to term them, respectively, 'association by relationship' and 'association by habituation.' The new names, he maintains, are not indifferent; for they do fuller justice than the old to the facts of self-observation, and they also point us to the conditions of association in the central nervous substance.³⁷

Here then is an improvement on the side of analysis and synthesis; but that is not enough. For ideas do not associate automatically, as it were of their own motion; the laws of association are, on the contrary, under the universal dominance of attention. And now there opens up, for experimental attack, a whole series of special problems which an empirical psychology, following only the single line of enquiry,

³³ *PP*, 717 ff., esp. 724.

³⁴ *PP*, 831, 835.

³⁵ *PP*, 720 f., 723 f., 834 f.

³⁶ *PP*, 792 f., 831 ff.

³⁷ *PP*, 788 ff.

must naturally miss. In their light we pass beyond associationism to a more faithful transcript of the 'course and connection of ideas';³⁸ and in like manner we avoid, in our psychology of will, the philosophical *impasse* of indeterminism.³⁹—

These paragraphs express, in rough summary, the teaching of the Wundt of 1874. He does not give psychology a distinct and peculiar subject-matter; the difference between physiology and psychology lies simply in our point of view. Wundt had already published a comprehensive work upon physiology, and now that he has turned to psychology he carries his knowledge and method with him; he is convinced that the processes of the inner life are best set forth in close connection with those of the outer life, and that the results of inner observation are surest when the appliances of external observation, the procedures of physiology, are pressed into psychological service. He spends little time upon preliminaries, but gets as quickly as may be to the exposition of facts. Where facts are few or lacking, he seeks to supplement or to supply them by observations of his own. His primary aim in all cases is to describe the phenomena of mind as the physiologist describes the phenomena of the living body, to write down what is there, going on observably before him: witness his treatment of idea, of concept, of attention, of association. There is still great space for argument, and the argument, we must admit, is often influenced by previous habits of thought, by psychological tradition, by a certain tendency to round things off to a logical completeness, by a somewhat naïve trust in the principle of evolution. The argument, however, does not impress the reader as anything but secondary: Wundt is at once too dogmatic and too ready to change his views. The recurring need of further facts and the patchwork character of the argument suggest, both alike, that psychology, under his guidance, has still a long systematic road to travel.

§ 6. We have now viewed our two psychologies from within. Brentano, we have found, looks back over the past, weeds out its errors with a sympathetic hand, accepts from it whatever will stand the test of his criticism, and organises old truth and new into a system meant, in all essentials, to last as long as psychology shall be studied; Wundt, after he has acknowledged his debt to the past, turns away from it and plunges into the multifarious and detailed work of the laboratories, producing a psychology that is as much encyclo-

³⁸ *PP*, 793; cf. the earlier sections of ch. xix.

³⁹ *PP*, 837 f.

paedia as system, and that bears on its face the need for continual revision. Which of the two books holds the key to a science of psychology?

Brentano has all the advantage that comes with historical continuity. His doctrine of immanent objectivity goes back to Aristotle and the Schoolmen, and the classification of psychological acts into ideas, judgments, and phenomena of love and hate goes back to Descartes.⁴⁰ More than this: he can claim kinship with every psychologist, of whatever school, who has approached his subject from the technically 'empirical' standpoint. For the 'empirical' psychologist means to take mind as he finds it; and like the rest of the world, who are not psychologists, he finds it in use; he finds it actively at work in man's intercourse with nature and with his fellow-man, as well as in his discourse with himself. Terms may change and classifications may vary, but the items of classification are always activities, and the terms employed—faculties, capacities, powers, operations, functions, acts, states—all belong to the same logical universe. Brentano, innovator though he is, takes his place as of right in a great psychological community.⁴¹

To offset this advantage, and to justify his own break with tradition, Wundt holds out the promise of an experimental

⁴⁰ PES, 115 f.; *The Origin of the Knowledge of Right and Wrong*, 47.

⁴¹ In spite of the remarks in §3 and in §6 below it may seem unjust to Brentano if, even in this preliminary sketch of the psychological issue, his interest in experiment is left without record. We note, then, that as early as 1874 he urged the establishment at Vienna of a psychological laboratory (*Ueber die Zukunft der Philosophie*, 1893, 47 f.); that he has published *Untersuchungen zur Sinnespsychologie* (1907) and in particular that he brought the Müller-Lyer illusion to the attention of psychologists (*Zeits. f. Psych. u. Phys. d. Sinnesorgane*, iii, 1892, 349); and that Stumpf, who was his pupil (*Ueberweg-Heinze*, iv, 1906, 334 f.), has given us the experimental *Tonpsychologie*. All this, however, does not prevent his being, in the narrow sense, an 'empirical' psychologist. Stumpf tells us that his own work is to "describe the psychical functions that are set in action by tones" (*Tonpsych.*, i, 1883, v) and declares later that "there cannot be a psychology of tones; only a psychology of tonal perceptions, tonal judgments, tonal feelings" (*Zur Einteilung der Wissenschaften*, 1907, 30). Brentano, even with a laboratory, would not have been, in Wundt's sense, an 'experimental' psychologist. We know, besides, something of Brentano's systematic programme. The empirical psychology is not to be concluded; it is to be supplemented and replaced by a 'descriptive' psychology (*The Origin*, etc., vii, 51 f.), fragments of which have appeared in *The Origin of the Knowledge of Right and Wrong* (dealing with the phenomena of love and hate and, in the Notes, with judgment) and in the *Untersuchungen* (sense-perception). This in turn is to be followed by an explanatory, or 'genetic' psychology, a sample of which is given in *Das Genie*, 1892 (see *The Origin*, etc., 123).

method. He should have been more explicit: for technology as well as science—medicine as well as physiology, engineering as well as physics—makes use of experiment. His actual purpose, as we trace it in the chapters of his book, is to transform psychology into an experimental science of the strict type, a science that shall run parallel with experimental physiology.⁴² He failed, no doubt, to see all that this purpose implied, and his earlier readers may be excused if they looked upon his work as an empirical psychology prefaced by anatomy and physiology and interspersed with psychophysical experiments. There is plenty of empirical psychology in the volume. If, however, we go behind the letter to the informing spirit; if we search out the common motive in Wundt's treatment of the familiar topics; if we carry ourselves back in thought to the scientific atmosphere of the seventies, and try in that atmosphere to formulate the purpose that stands out sharp and clear to our modern vision; then the real significance of the *Physiological Psychology* cannot be mistaken. It speaks the language of science, in the rigorous sense of the word, and it promises us in this sense a science of psychology.

But Brentano also speaks of a 'science' of psychology. Which of the two authors is in the right?

⁴² The substitution of folk-psychology for experiment in the study of the more complicated mental processes appears in the fourth edition (*PP*, i, 1893, 5); the reservation in regard to psychophysical parallelism in the fifth edition (*PP*, iii, 1903, 775 ff.).